

1 What is claimed is:

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3 1. A dishwasher comprising:  
4 a housing:  
5 a tub in the housing to hold tableware;  
6 an injector assembly for injecting water on the tableware in the tub; and  
7 a water softener softening the water supplied to the injector assembly, the water  
8 softener comprising:

9 a first container holding an ion-exchange resin for removing heavy  
10 metal and metal ions from the water;

11 a second container holding a predetermined amount of salt and salt  
12 water to supply the salt water to the first container to recycle the ion-  
13 exchange resin that is saturated;

14 a float installed in the second container; and

15 a sensor provided to the second container to sense a concentration of  
16 the salt water according to a distance from the float.

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18 2. The dishwasher as claimed in claim 1, wherein the float fluctuates in height  
19 according to the concentration of the salt water.

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21 3. The dishwasher as claimed in claim 1, wherein a guide for guiding floatage  
22 of the float is further provided to the second container.

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24 4. The dishwasher as claimed in claim 1, wherein the float comprises a body

25 and a magnet attached to the body.

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27 5. The dishwasher as claimed in claim 1, wherein the sensor senses an amount  
28 of the salt in the second container according to the distance from the float.

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30 6. The dishwasher as claimed in claim 1, wherein the sensor senses a shortage  
31 of the salt in the second container according to the distance from the float.

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33 7. The dishwasher as claimed in claim 1, wherein the sensor generates a current  
34 if the distance from the float is smaller than a predetermined distance.

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36 8. The dishwasher as claimed in claim 1, wherein the sensor generates a current  
37 to vary according to the distance from the float.

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39 9. The dishwasher as claimed in claim 1, further comprising an information  
40 device informing the concentration of the salt water according to a signal generated from the  
41 sensor.

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43 10. The dishwasher as claimed in claim 1, further comprising an information  
44 device informing a salt amount in the second container.

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46 11. The dishwasher as claimed in claim 10, wherein the information device  
47 informs a shortage of the salt amount.

49           12.     A water softener of a dishwasher, the water softener softening water supplied  
50 to an injector assembly of the dishwasher, the water softener comprising:

51               a first container holding an ion-exchange resin for removing heavy metal and metal  
52 ions from the water;

53               a second container holding a predetermined amount of salt and salt water to supply  
54 the salt water to the first container to recycle the ion-exchange resin that is saturated;

55               a float installed in the second container; and

56               a sensor provided to the second container to sense a concentration of the salt water  
57 according to a distance from the float.

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59           13.     The water softener as claimed in claim 12, wherein the float fluctuates in  
60 height according to the concentration of the salt water.

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62           14.     The water softener as claimed in claim 12, wherein a guide for guiding  
63 floatage of the float is further provided to the second container.

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65           15.     The water softener as claimed in claim 12, wherein the float comprises a  
66 body and a magnet attached to the body.

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68           16.     The water softener as claimed in claim 12, wherein the sensor senses an  
69 amount of the salt in the second container according to the distance from the float.

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71           17.     The water softener as claimed in claim 12, wherein the sensor senses a  
72 shortage of the salt in the second container according to the distance from the float.

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74           18.     The water softener as claimed in claim 12, wherein the sensor generates a  
75 current if the distance from the float is smaller than a predetermined distance.  
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77           19.     The water softener as claimed in claim 12, wherein the sensor generates a  
78 current to vary according to the distance from the float.  
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80           20.     The water softener as claimed in claim 12, further comprising an information  
81 device informing the concentration of the salt water according to a signal generated from the  
82 sensor.  
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84           21.     The water softener as claimed in claim 12, further comprising an information  
85 device informing a salt amount in the second container.  
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87           22.     The dishwasher as claimed in claim 21, wherein the information device  
88 informs a shortage of the salt amount.